

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference P128732-PCT | FOR FURTHER ACTION See Form PCT/PEA/416 | |
| International application No. PCT/BR2004/000232 | International filing date (day/month/year) 24.11.2004 | Priority date (day/month/year) 25.11.2003 |
| International Patent Classification (IPC) or national classification and IPC G05D23/24 | | |
| Applicant EMPRESA BRASILEIRA DE COMPRESSORES S.A.-EMBRACO al | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 17 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | |
| Date of submission of the demand 23.09.2005 | Date of completion of this report 31.01.2006 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Vaño Gea, J Telephone No. +49 89 2399-7671 | |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/BR2004/000232

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1 received on 23.09.2005 with letter of 23.09.2005
2-13 filed with telefax on 26.12.2005

Claims, Numbers

1-32 filed with telefax on 26.12.2005

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/BR2004/000232

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-32 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-32 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-32 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

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Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1 The following document was cited in the International Search Report:

D1: US-A-5 564 831 (BASHARK ET AL) 15 October 1996

1.1 The following document is further considered to be relevant (Article 33(6) PCT).

D2: WO 03/095960 A1, 20 November 2003

2 Document **D2** is considered to represent the most relevant state of the art for independent claim 1.

2.1 Document D2 discloses

- a) a sensing assembly 1 comprising a set of turns of an electrical winding coil 5 and an interaction element 4 adjustable by a user, the set of turns and the interaction element being movable in relation to each other, the set of turns being subjected to a sampling voltage and having a resistance (D2, figure 1 and abstract),
- b) the sensing assembly being suitable for the measurement of a temperature of an environment, the measurement of the temperature of the environment being obtained from the alteration of the resistance of the set of turns (D2, page 10, line 23 to page 12, line 4 and figure 5),

from which the subject-matter of claim 1 differs in that

- c) the sensing assembly is further suitable for defining the temperature set point of a cooling system, the definition of the temperature set point of the cooling system being obtained from the inductance of the set of turns, by displacing the interaction element with respect to the set of turns.

2.2 The technical problem to be solved by the present invention may be regarded as to measure the temperature of an environment and adjusting the temperature set point of a cooler by means of a single simple element.

2.3 Although document D2 discloses the simultaneous use of the sensing assembly as a position sensor and as a temperature sensor (see D2, page 10, line 23 to page 12, line 4), no hint can be found in the prior art that would lead the skilled person to use said sensing assembly as a temperature set point selector as according to document D1 (see D1, column 10, lines 31-42 and figure 1) in order to achieve temperature control employing an inductive position detector.

2.4 The subject-matter of independent claim 1 is therefore **novel** and **inventive** (Articles 33(2) and (3) PCT).

3 Document **D1** is considered to represent the most relevant state of the art for independent claim 14.

3.1 Document D1 discloses

- a) a temperature set point adjusting and a temperature of an environment measuring system for a temperature control system, the adjusting and measuring system comprising a sensing assembly and a processing unit (D1, column 10, lines 31-42, abstract and figure 1),

from which the subject-matter of claim 14 differs in that

- b) the temperature control system is a cooling system and
- c) the sensing assembly has the features defined in claim 1.

3.2 The technical problem to be solved by the present invention may be regarded also here as to

measure the temperature of an environment and adjusting the temperature set point of a cooler by means of a single simple element.

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(SEPARATE SHEET)**

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- 3.3 Although feature b) is considered to be trivial, the reasoning of section 2.3 applies mutatis mutandis to claim 14 with respect to feature c).
- 3.4 The subject-matter of independent claim **14** is therefore **novel** and **inventive** (Articles 33(2) and (3) PCT).
- 4 The corresponding independent claim **28** is **novel** and **inventive** for the same reasons as claim 14 (Articles 33(2) and (3) PCT).
- 5 Claims **2 to 13, 15 to 27 and 29 to 32** are dependent on claims 1, 14 and 28, respectively, and as such also meet the requirements of the PCT with respect to novelty and inventive step.